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A science blog **with Eric Berger**

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Hurricane season goes bye-bye. So might the Saffir-Simpson scale as we know it, too.

Last month we discussed the shortcomings of the **Saffir-Simpson scale** when it comes to measuring hurricanes. It turns out that we weren't alone.

As I **reported Sunday**, there's a serious effort afoot to modify the Saffir-Simpson scale to better account for storm surge values. If a change is going to happen, it's going to happen after a storm like Hurricane Ike, which so dramatically illustrated the weakness of the venerable Saffir-Simpson scale.

At a meeting of forecasters and meteorologists in Florida this week, which has the potential to change policy, the meteorologist-in-charge of Houston's National Weather Service Office, **Gene Hafele**, is making the following proposal:

> **DISCUSSION**: Hurricanes Ike was an example of the failure of the Saffir-Simpson (SSHS) scale to represent the potential for loss of life and property. The large wind field constituted a severe storm surge threat despite a relatively modest SSHS2 maximum sustained surface wind speed. To continue to use the SSHS in such situations works against emergency management efforts, advisories, and statement products that are encouraging evacuation of low lying areas susceptible to storm surge. It is hard to convince people that they could face "certain death" when they see that a storm is not even considered to be a major hurricane on the SSHS scale.
>
> **RECOMMENDATION**: Develop/implement a new scale that would represent the potential for Storm Surge with a particular storm. One possibility would be to use the Surge Destructive Potential (SDP) scale developed by AOML.

The surge destructive potential scale Hafele cites is outlined in this **recent paper** by Mark Powell and Timothy Reinhold. The forecasters and scientists will probably discuss Hafele's recommendation on Thursday. I think a change is needed, but I'll be surprised if anything is done now. I expect the discussion on this issue to last for a while.

In the story I also speak with local hurricane forecaster **Chris Hebert** who has developed an alternative scale he calls the **Hurricane Severity Index**, which takes into account storm size and therefore better projects a storm's destructive potential. The HSI is a 0 to 50 point scale, allotting up to 25 points for a tropical cyclone's intensity and up to 25 points for wind field size.

I thought it would be interesting to compare past storms based upon this new metric, as it gives us a new perspective on some older systems.

We only have solid data on wind field size for the last two decades, so the table below mostly includes the

maximum HSI scores for recent storms. But beginning with **Hurricane Carla** Chris has also estimated the HSI value of some of the most famous storms of the last half century.

Incidentally, Alicia at landfall had an HSI score of 22, which was considerably lower than Ike's value of 32.

Posted by Eric Berger at December 1, 2008 09:30 AM

Storm name - Year	Wind (knots) - Category	HSI Intensity	HSI Size	HSI Total
Carla 1961	150 - Cat 5	25	25	50
Allen 1980	155 - Cat 5	25	25	50
Gilbert 1988	155 - Cat 5	25	24	49
Katrina 2005	150 - Cat 5	25	22	47
Ivan 2004	140 - Cat 5	22	23	45
Isabel 2003	140 - Cat 5	22	23	45
Opal 1995	130 - Cat 4	19	25	44
Luis 1995	120 - Cat 4	16	25	41
Rita 2005	145 - Cat 5	23	17	40
Mitch 1998	155 - Cat 5	25	15	40
Camille 1969	165 - Cat 5	25	14	39
Wilma 2005	125 - Cat 5	17	19	36
Ike 2008	90 - Cat 2	9	23	32
Gustav 2008	130 - Cat 4	11	19	30